

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 29, 2011

TO: T. J. Dwyer, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending July 29, 2011

Tank Farms: SRR will be submitting a Documented Safety Analysis (DSA) revision to reflect their reanalysis of the consequences from a seismic event. The unmitigated offsite consequences from multiple waste tank explosions will be 3 rem TED. This dose bounded alternative calculations that took into account entrainment and various supernate levels. The previously calculated offsite dose was > 25 rem TED. The onsite consequence remains > 100 rem TED. This DSA revision will only affect the calculated dose – no changes to the safety controls or their functional classifications are planned (see 7/1/11 report).

The shoes of four operators rolling up a tank 38 flush water hose inside a radiological buffer area were contaminated by the residual water in the hose. SRR conducted extensive surveys to identify how the residual water became contaminated. They note that after a leak check was performed at diversion box 7 in May, the header pipe became highly contaminated. Over time, SRR suspects that contamination migrated through the stagnant flush water system to tanks 38 and 42.

H-Canyon: A potential inadequacy in the safety analysis was declared because it is not clear in the DSA how the maximum chemical inventory limits are established and controlled.

After receiving a halon discharge alarm on the new warm crane, the Fire Department confirmed that halon had not discharged. Later, a fire protection engineer and two crane operators entered the crane cab. As soon as they entered the cab, the halon system discharged. The workers were not at risk since the system is designed to keep concentrations at a safe level. Apparently, leaking freon had triggered one detector initially and the movement of the cab door pushed the freon towards the second detector. The system is designed to activate upon confirmation from both detectors.

Tritium: The Material Test Facility has been conducting drop tests of new and aged, unloaded reservoirs to determine if a damaged stem would release tritium. Despite worst-case, impact angles designed to stress and bend the stems, the reservoir models tested would not have released any tritium.

K-Area: A recent system health report highlighted the difficulties encountered by the fire protection water suppression system during the last year. This system was upgraded to safety significant in 2010. Although only one of the two pumps are required to be operable, 75 % of the time one of the pumps was inoperable and neither were available 5% of the time. SRNS had to replace both start battery banks earlier this month since they forgot to do any preventive maintenance. The system currently has four impairments and the electric fire pump is not compliant with National Fire Protection Association 25 performance requirements. The storage tank remains unpainted despite being recommended following a 2006 inspection.

The Savannah River Site (SRS) - Citizens Advisory Board (CAB): The site rep attended the bi-monthly meeting of the full CAB. During this meeting, the CAB received briefings from the Department of Energy on the status of activities at the site and presented sub-committee recommendations for CAB approval. Because several members of the CAB are concerned that the DOE does not have a disposition path for much of the nuclear material located at the site, they have requested that DOE provide a matrix of the waste and nuclear materials at SRS as well as those materials anticipated to arrive on the site.